

CLAIMS

What is claimed is:

- 1 1. A method for electrically interconnecting a signal
2 between a first circuit board and a second circuit board,
3 the first circuit board having a first signal conducting
4 means formed therein, the second circuit board having a
5 second signal conducting means formed therein, the first
6 signal conducting means being shielded by a first
7 electrically conductive shield, the second signal conducting
8 means being shielded by a second electrically conductive
9 shield, the method comprising the steps of:
10 forming a first opening in the first electrically
11 conductive shield so as to expose the first signal
12 conducting means in the first circuit board;
13 forming a second opening in the second electrically
14 conductive shield so as to expose the second signal
15 conducting means in the second circuit board;
16 applying an electrically conductive adhesive, solder
17 paste, or interposer/elastomer device around at least one of
18 the first and second openings and within at least one of the
19 first and second openings; and

20 securing the first circuit board and the second circuit
21 board such that the first opening and the second opening are
22 aligned and a signal propagating along the first signal
23 conducting means is electrically interconnected to the
24 second signal conducting means.

1 2. The method as defined in claim 1, further comprising
2 the step of:

3 applying the electrically conductive adhesive or solder
4 paste within at least one of a first via located within the
5 first opening and a second via located within the second
6 opening.

1 3. The method as defined in claim 1, wherein the first
2 signal conducting means comprises a pair of signal
3 conductors and the second signal conducting means comprises
4 a pair of signal conductors.

1 4. The method as defined in claim 1, wherein the first
2 signal conducting means and the second signal conducting
3 means each comprise a single conductor.

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1 8. The method as defined in claim 1, wherein the signal is
2 carries data at a rate on the order of 1 Gb/s and above.

9. The method as defined in claim 1, wherein the first circuit board has a third signal conducting means formed therein, wherein the second circuit board has a fourth signal conducting means formed therein, the third signal conductor being shielded by a third electrically conductive shield, the fourth signal conducting means being shielded by a fourth electrically conductive shield, further comprising the steps of:

forming a third opening in the third electrically conductive shield so as to expose the third signal conducting means in the first circuit board;

forming a fourth opening in the fourth electrically conductive shield so as to expose the fourth signal conducting means in the second circuit board;

applying an electrically conductive adhesive, solder paste, or interposer/elastomer device around at least one of the third and fourth openings and within at least one of the third and fourth openings; and

securing the first circuit board and the second circuit board such that the third opening and the fourth opening are aligned and another signal propagating along the third

9 a second circuit board having a second signal
10 conducting means formed therein, the second signal
11 conducting means being shielded by a second electrically
12 conductive shield, the second electrically conductive shield
13 having a second opening formed therein so as to expose the
14 second signal conducting means in the second circuit board;
15 and

16 an electrically conductive adhesive, solder paste, or
17 interposer/elastomer device applied surrounding at least one
18 of the first and second openings and within at least one of
19 the first and second openings;

20 wherein the first circuit board and the second circuit
21 board are electrically interconnected by the electrically
22 conductive adhesive, solder paste, or interposer/elastomer
23 device such that the first opening and the second opening
24 are aligned and a signal propagating along the first signal
25 conducting means is electrically interconnected to the
26 second signal conducting means.

1 14. The system as defined in claim 13, further comprising:

2 electrically conductive adhesive or solder paste within
3 a first via located within the first opening and within a
4 second via located within the second opening.

1 18. The system as defined in claim 13, wherein the first
2 electrically conductive shield and the second electrically
3 conductive shield are formed by respective ground plane
4 layers of the first circuit board and the second circuit
5 board.

8 wherein the second circuit board has a fourth signal
9 conducting means formed therein, wherein the fourth signal
10 conducting means is shielded by a fourth electrically
11 conductive shield, wherein a fourth opening is formed in the
12 fourth electrically conductive shield so as to expose the
13 fourth signal conducting means in the second circuit board;

1 27. The method as defined in claim 25, wherein the
2 first signal conducting means and the second signal
3 conducting means each comprise a single signal conductor and
4 the step of applying electrically conductive adhesive or
5 solder paste within the opening comprises applying
6 conductive adhesive or solder paste within at least one via
7 to reach the single signal conductor.

3 a first circuit board having a first signal conducting
4 means formed therein, the first signal conducting means
5 being shielded by a first electrically conductive shield,
6 the first electrically conductive shield having a first

7 opening formed therein so as to expose the first signal
8 conducting means in the first circuit board; and
9 a second circuit board having a second signal
10 conducting means formed therein; and
11 an electrically conductive adhesive, solder paste, or
12 interposer/elastomer device surrounding the first opening
13 and applied within the first opening,
14 wherein the first circuit board and the second circuit
15 board are positioned such that the first signal conducting
16 means and the second signal conducting means are aligned
17 through the opening and a signal propagating along the first
18 signal conducting means is electrically interconnected to
19 the second signal conducting means.

1 29. The system as defined in claim 28, wherein the
2 first signal conducting means comprises a first pair of
3 conductors and the second signal conducting means comprises
4 a second pair of conductors and each conductor of the first
5 pair is connected with a conductor of the second pair for
6 transmission of two signals between the first pair and the
7 second pair.

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